



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS TX 75202-2733

MAR 28 2017

CERTIFIED MAIL 7014 0150 0000 2452 5387 RETURN RECEIPT REQUESTED

Mr. David Johnson  
Plant Manager  
INVISTA Victoria  
P.O. Box 2626  
Victoria, TX 77902-2626

RE: INVISTA Victoria Petition Reissuance Final Approval Decision for  
Wells WDW-004, WDW-028, WDW-029, WDW-030, WDW-105, WDW-106, WDW-142,  
WDW-143, and WDW-144

Dear Mr. Johnson:

Effective the date of this letter, the Environmental Protection Agency (EPA) approves INVISTA Victoria's request for the reissuance of an exemption to the land disposal restrictions for existing wells WDW-004, WDW-028, WDW-029, WDW-030, WDW-105, WDW-106, WDW-142, WDW-143, and WDW-144.

The land disposal restrictions prohibit the injection of hazardous waste unless a petitioner can demonstrate to EPA, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the injection zone for as long as the wastes remain hazardous. The land disposal restrictions for injection wells codified in 40 CFR Part 148 provide the standards and procedures by which petitions to dispose of an otherwise prohibited waste by injection will be reviewed and by which exemptions pursuant to these petitions will be granted or denied. Part 148 also provides for the reissuance of an exemption if the reissuance complies with the above-mentioned standards.

A letter dated January 31, 2017, informed INVISTA Victoria that EPA was proposing to approve its petition reissuance request for an exemption to the land disposal restrictions. The public comment period associated with this decision began on February 3, 2017, and closed on March 21, 2017, and no comments were received.

Based on a detailed technical review of the petition reissuance request and support documents, EPA has determined that this information for the INVISTA Victoria site meets the requirements of 40 CFR Part 148 by demonstrating that, to a reasonable degree of certainty, there will be no migration of hazardous constituents from the injection zone for 10,000 years.

The following are conditions of this land disposal restrictions exemption reissuance.

### Petition Reissuance Final Approval Conditions

This final approval of a petition for reissuance of an exemption to allow injection of restricted hazardous wastes is subject to the following conditions, which are necessary to assure that the standard in 40 CFR §148.20(a) is met. Noncompliance with any of these conditions is grounds for termination of the exemption in accordance with 40 CFR §148.24(a)(1). This approved exemption is applicable to the INVISTA Victoria injection Wells WDW-004, WDW-028, WDW-029, WDW-030, WDW-105, WDW-106, WDW-142, WDW-143, and WDW-144 located at the Victoria, Texas site.

1. Injection of restricted waste shall be limited to the following injection zone:

<u>Permit Number</u>	<u>Well Number</u>	<u>Injection Zone Depth</u>
WDW-142	1	3040' - 4700' <sup>1</sup>
WDW-143	2	3035' - 4700' <sup>2</sup>
WDW-144	3	3025' - 4700' <sup>3</sup>
WDW-004	4	3035' - 4700' <sup>4</sup>
WDW-028	5	3045' - 4700' <sup>5</sup>
WDW-029	6	3055' - 4700' <sup>6</sup>
WDW-030	7	3035' - 4700' <sup>7</sup>
WDW-105	8	3015' - 4700' <sup>8</sup>
WDW-106	9	3025' - 4700' <sup>9</sup>

<sup>1</sup> WDW-142 Injection Zone depths are referenced to Kelly Bushing (KB) depths on Well 142's Schlumberger Self Potential – Resistivity Log dated 4/6/49.

<sup>2</sup> WDW-143 Injection Zone depths are referenced to KB depths on WDW-143's Schlumberger Spontaneous Potential – Resistivity Log dated 8/7/54.

<sup>3</sup> WDW-144 Injection Zone depths are referenced to KB depths on WDW-144's Schlumberger Electrical Log dated 11/13/57.

<sup>4</sup> WDW-004 Injection Zone depths are referenced to KB depths on WDW-004's Schlumberger Electrical Log dated 5/17/63.

<sup>5</sup> WDW-028 Injection Zone depths are referenced to KB depths on WDW-028's Schlumberger Electrical Log dated 1/28/67.

<sup>6</sup> WDW-029 Injection Zone depths are referenced to KB depths on WDW-029's Schlumberger Electrical Log dated 1/18/67.

<sup>7</sup> WDW-030 Injection Zone depths are referenced to KB depths on WDW-030's Schlumberger Electrical Log dated 1/14/69.

<sup>8</sup> WDW-105 Injection Zone depths are referenced to KB depths on WDW-105's Welex Induction-Electric Log dated 7/7/72.

<sup>9</sup> WDW-106 Injection Zone depths are referenced to KB depths on WDW-106's Welex Induction-Electric Log dated 8/1/72.)

The injection intervals shall be defined by the following correlative log depths:

<u>Permit Number</u>	<u>Well Number</u>	<u>Injection Intervals</u>	
		<u>Main Catahoula</u>	<u>Lower Catahoula</u>
WDW-142	1	3738'-4020' <sup>1</sup>	4042' - 4175' <sup>1</sup>
WDW-143	2	3720'-4028' <sup>2</sup>	4066' - 4116' <sup>2</sup>
WDW-144	3	3723'-4012' <sup>3</sup>	4040' - 4126' <sup>3</sup>

WDW-004	4	3734'-4042' <sup>4</sup>	4080' - 4125' <sup>4</sup>
WDW-028	5	3753'-4050' <sup>5</sup>	4076' - 4148' <sup>5</sup>
WDW-029	6	3790'-4057' <sup>6</sup>	4083' - 4174' <sup>6</sup>
WDW-030	7	3746'-4052' <sup>7</sup>	4079' - 4135' <sup>7</sup>
WDW-105	8	3715'-3984' <sup>8</sup>	4002' - 4118' <sup>8</sup>
WDW-106	9	3719'-4025' <sup>9</sup>	4060' - 4105' <sup>9</sup>

<sup>1</sup> WDW-142 Injection Interval depths are referenced to Kelly Bushing (KB) depths on Well 142's Schlumberger Self Potential – Resistivity Log dated 4/6/49.

<sup>2</sup> WDW-143 Injection Interval depths are referenced to KB depths on WDW-143's Schlumberger Spontaneous Potential – Resistivity Log dated 8/7/54.

<sup>3</sup> WDW-144 Injection Interval depths are referenced to KB depths on WDW-144's Schlumberger Electrical Log dated 11/13/57.

<sup>4</sup> WDW-004 Injection Interval depths are referenced to KB depths on WDW-004's Schlumberger Electrical Log dated 5/17/63.

<sup>5</sup> WDW-028 Injection Interval depths are referenced to KB depths on WDW-028's Schlumberger Electrical Log dated 1/28/67.

<sup>6</sup> WDW-029 Injection Interval depths are referenced to KB depths on WDW-029's Schlumberger Electrical Log dated 1/18/67.

<sup>7</sup> WDW-030 Injection Interval depths are referenced to KB depths on WDW-030's Schlumberger Electrical Log dated 1/14/69.

<sup>8</sup> WDW-105 Injection Interval depths are referenced to KB depths on WDW-105's Welex Induction-Electric Log dated 7/7/72.

<sup>9</sup> WDW-106 Injection Interval depths are referenced to KB depths on WDW-106's Welex Induction-Electric Log dated 8/1/72.)

- For Wells WDW-004, WDW-028, WDW-029, WDW-030, WDW-105, WDW-106, WDW-142, WDW-143, and WDW-144, the cumulative monthly volume injected into each of the injection intervals shall not exceed that calculated as follows:

Main Catahoula Sand: (1800 gpm)(1440 minutes/day)(number of days in that month)

Lower Catahoula Sand: (700 gpm)(1440 minutes/day)(number of days in that month)

- The facility shall cease injection into WDW-004, WDW-028, WDW-029, WDW-105, WDW-106, WDW-142, WDW-143, and WDW-144 by December 31, 2025.
- The facility shall also cease injection, when starting from January 1, 2006, either 18,935,000,000 cumulative gallons have been injected into the Main Catahoula Sand interval or 7,363,000,000 cumulative gallons have been injected into the Lower Catahoula Sand interval, if this occurs before the operational life cessation of injection date of December 31, 2025, listed in Petition Condition No. 3 above. INVISTA shall also annually report to EPA the cumulative injection volume injected into each of the two intervals and based on petition model forecast assumptions, starting from January 1, 2006, the cumulative injection volume remaining into the two intervals.
- The characteristics of the injected waste stream for WDW-004, WDW-028, WDW-029, WDW-030, WDW-105, WDW-106, WDW-142, WDW-143, and WDW-144 shall at all times conform to those described in Sections 2 and 6 of the INVISTA Victoria 2006 Petition Reissuance document. The running whole three calendar month volume weighted surface density of the waste stream injected into each interval shall remain within a range from 1.000 to 1.120 gm/cm<sup>3</sup>

at 77°F and 1 atmosphere which is equivalent to a specific gravity range of 1.000 to 1.120 measured at 77°F and 1 atmosphere with a reference temperature of 77°F.

The running three whole calendar month volume weighted density/specific gravity average for each interval shall be calculated by multiplying each day's density/specific gravity value by that day's injected volume into each interval, totaling those values for the running three whole calendar month period, and dividing by that corresponding running three whole calendar month period injected volume. For the purpose of the above calculation, each day's density/specific gravity value per interval shall be calculated based on at least one representative grab sample from each waste stream being injected into each active injection interval and as discussed in Section 6 of the 2006 Petition Reissuance document for WDW-004, WDW-028, WDW-029, WDW-030, WDW-105, WDW-106, WDW-142, WDW-143, and WDW-144.

6. The final approval for injection is limited to the following hazardous wastes:

D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043

F001, F002, F003, F004, F005, F006, F007, F008, F009, F011, F012, F019, F020, F021, F022, F023, F024, F025, F026, F027, F028, F039 (for constituents listed in Table 2-23 of the reissuance document),

K001, K002, K003, K004, K005, K006, K007, K008, K009, K010, K011, K013, K014, K015, K016, K018, K019, K020, K021, K022, K023, K024, K025, K026, K028, K029, K030, K031, K035, K042, K043, K046, K048, K049, K050, K051, K052, K060, K061, K062, K069, K071, K073, K083, K084, K085, K086, K087, K093, K094, K095, K096, K099, K100, K101, K102, K103, K104, K105, K106, K111, K116, K117, K118, K136

P010, P011, P012, P013, P036, P038, P063, P065, P074, P092, P099, P101, P103, P104, P106, P110, P114, P120

U002, U003, U019, U032, U037, U043, U044, U051, U052, U056, U057, U072, U077, U078, U079, U080, U105, U127, U131, U136, U144, U145, U146, U151, U154, U159, U161, U188, U190, U196, U204, U205, U210, U211, U213, U228, U239

7. The facility must petition for approval to inject additional hazardous wastes which are not included in Condition No. 6, above. The facility must also petition for approval to increase the concentration of any waste which would necessitate the recalculation of the limiting concentration reduction factor and the extent of the waste plume. Petition reissuances and modifications should be made pursuant to 40 CFR §148.20 (e) or (f).
8. INVISTA shall annually submit to EPA the results of a bottom hole pressure survey from one active injection well completed solely into each injection interval. Additionally, INVISTA shall annually submit to EPA a static bottom hole pressure measurement from each injection well where a bottom hole pressure survey isn't performed. These static pressure surveys shall be performed after allowing for a shut in period in each well for a period of time sufficient to allow the pressure in its injection interval(s) to reach equilibrium, in accordance with 40 CFR §146.68(e)(1).

INVISTA shall also annually submit to EPA the results of two pulse tests:

- a) The first test between the Main Catahoula injection well conducted at the end of its falloff test and the closest solely completed Main Catahoula injection well and
- b) a second test between the Lower Catahoula injection well conducted at the end of its falloff and another dually completed Main and Lower Catahoula injection well.

INVISTA shall conduct its annual pressure transient testing program and prepare its annual report in accordance with the Annual Well Pressure Transient Testing and Report plan as detailed in Section 6.5.4 and Appendix 6-4 of the 2006 Petition Reissuance document. The annual report should include a comparison of reservoir parameters determined from the falloff and pulse tests and static pressure measurements with parameters used in the approved no migration petition reissuance.

9. INVISTA shall annually submit to EPA a radioactive tracer survey and annulus pressure test for WDW-004, WDW-028, WDW-029, WDW-030, WDW-105, WDW-106, WDW-142, WDW-143, and WDW-144.
10. INVISTA shall submit a copy of the annual waste stream analytical report(s) for any waste stream(s) being injected into WDW-004, WDW-028, WDW-029, WDW-030, WDW-105, WDW-106, WDW-142, WDW-143, and WDW-144 and the waste constituents listed in Table 2-23 and the updated UIC Annual Waste Analysis table included in Appendix 6-1 of the INVISTA Victoria 2006 Petition Reissuance document.
11. INVISTA shall provide annual demonstrations to EPA that the injecting bottom hole pressure buildup has not exceeded 217 psi (1927.8 psig @ 3880 ft BGL) in an injection well completed and injecting solely into the Main Catahoula Sand injection interval and 241 psi (2001.5 psig @ 4000 ft BGL) in an injection well completed and injecting solely into the Lower Catahoula Sand injection interval. To perform the annual demonstration for each interval INVISTA will be required to maintain at least one solely completed injection well in each interval.

The demonstrations shall be based upon the results of the annual falloff test for the appropriate wells after correcting for an analysis of skin effects and adjusting all pressure survey data to the appropriate reference depth (3880 feet below ground level (BGL) for the Main Catahoula interval and 4000 feet BGL for the Lower Catahoula interval). If the pressure buildup reaches 90% of the pressure buildup limit in either interval (195.3 psi in the Main Catahoula interval and 216.9 psi in Lower Catahoula interval), EPA may require more frequent bottom hole pressure surveys and analyses. If 95% or greater of the pressure buildup limit is reached in either interval, 206.15 psi in the Main Catahoula Sand interval and 228.95 psi in the Lower Catahoula Sand interval, EPA may require the facility to cease injection into the affected interval(s) or take other appropriate action.

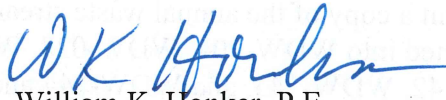
12. INVISTA shall notify EPA in the event that WDW-004, WDW-028, WDW-029, WDW-030, WDW-105, WDW-106, WDW-142, WDW-143, or WDW-144 lose mechanical integrity, prior to any well work, or if INVISTA plans to plug WDW-004, WDW-028, WDW-029, WDW-030, WDW-105, WDW-106, WDW-142, WDW-143, or WDW-144. If any well work or plugging is being planned, INVISTA shall also submit the procedures to EPA for review prior to commencing any work.

13. Upon the expiration, cancellation, reissuance, or modifications of the Texas Commission on Environmental Quality permits for WDW-004, WDW-028, WDW-029, WDW-030, WDW-105, WDW-106, WDW-142, WDW-143, and WDW-144, this exemption is subject to review. A new demonstration may be required if information shows that the basis for granting the exemption is no longer valid under 40 CFR §148.23 and §148.24.

In addition to the above conditions, this final approval of a petition for reissuance of an exemption is contingent on the validity of the information submitted in the INVISTA Vitoria petition reissuance request for an exemption to the land disposal restrictions. This final reissuance decision is subject to termination when any of the conditions occur which are listed in 40 CFR §148.24, including noncompliance, misrepresentation of relevant facts, or a determination that new information shows that the basis for approval is no longer valid.

If you have any questions or comments, please call Brian Graves at (214) 665-7193 or email him at [graves.brian@epa.gov](mailto:graves.brian@epa.gov).

Sincerely yours,



William K. Honker, P.E.

Director

Water Division

ecc: Mr. Lance Thomasson, INVISTA Victoria  
Ms. Lorrie Council, TCEQ  
Mr. Richard Heitzenrater, TCEQ Region 14